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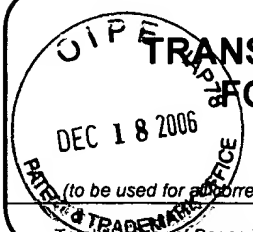

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	09/830,899
Filing Date	Aug. 31, 2001
First Named Inventor	Paek, et al.
Art Unit	2171
Examiner Name	Etienne Pierre Leroux
Attorney Docket Number	070050.1520

ENCLOSURES *(Check all that apply)*

- [✓] Fee Transmittal Form
  - [ ] Fee Attached
- [ ] Amendment/Reply
  - [ ] After Final
  - [ ] Affidavits/declaration(s)
- [ ] Extension of Time Request
- [ ] Express Abandonment Request
- [ ] Information Disclosure Statement
- [ ] Certified Copy of Priority Document(s)
- [ ] Reply to Missing Parts/ Incomplete Application
  - [ ] Reply to Missing Parts under 37 CFR 1.52 or 1.53
- [ ] Drawing(s)
- [ ] Licensing-related Papers
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- [ ] Petition to Convert to a Provisional Application
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- [ ] After Allowance Communication to TC
- [✓] Appeal Communication to Board of Appeals and Interferences
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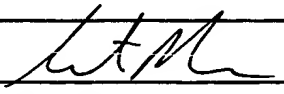
Signature			
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FEE TRANSMITTAL for FY 2005

Effective 10/01/2004. Patent fees are subject to annual revision.

☑ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT ($) 250.00

Complete if Known	
Application Number	09/830,899
Filing Date	Aug. 31, 2001
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Art Unit	2171
Attorney Docket No.	070050.1520

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1. BASIC FILING FEE

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1001	2001	Utility filing fee	
1002	2002	Design filing fee	
1003	2003	Plant filing fee	
1004	2004	Reissue filing fee	
1005	2005	Provisional filing fee	

SUBTOTAL (1) ($) 0

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

			Extra Claims		Fee from below	Fee Paid
Total Claims		-20 =		X		=0
Independent Claims		-3 =		X		=0
Multiple Dependent						=0

Large Entity Fee Code	Small Entity Fee Code	Fee Description
1202	2202	Claims in excess of 20
1201	2201	Independent claims in excess of 3
1203	2203	Multiple dependent claim, if not paid
1204	2204	** Reissue independent claims over original patent
1205	2205	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 0.00

***or number previously paid, if greater; For Reissues, see above*

FEE CALCULATION (continued)

3. ADDITIONAL FEES

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1051	2051	Surcharge - late filing fee or oath	
1052	2052	Surcharge - late provisional filing fee or cover sheet	
1053	1053	Non-English specification	
1812	1812	For filing a request for *ex parte* reexamination	
1804	1804	Requesting publication of SIR prior to Examiner action	
1805	1805	Requesting publication of SIR after Examiner action	
1251	2251	Extension for reply within first month	
1252	2252	Extension for reply within second month	
1253	2253	Extension for reply within third month	
1254	2254	Extension for reply within fourth month	
1255	2255	Extension for reply within fifth month	
1401	2401	Notice of Appeal	
1402	2402	Filing a brief in support of an appeal	250
1403	2403	Request for oral hearing	
1451	1451	Petition to institute a public use proceeding	
1452	2452	Petition to revive - unavoidable	
1453	2453	Petition to revive - unintentional	
1501	2501	Utility issue fee (or reissue)	
1502	2502	Design issue fee	
1503	2503	Plant issue fee	
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1807	1807	Processing fee under 37 CFR 1.17(q)	
1806	1806	Submission of Information Disclosure Stmt	
8021	8021	Recording each patent assignment per property (times number of properties)	
1809	2809	Filing a submission after final rejection (37 CFR 1.129(a))	
1810	2810	For each additional invention to be examined (37 CFR 1.129(b))	
1801	2801	Request for Continued Examination (RCE)	
1802	1802	Request for expedited examination of a design application	

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SUBMITTED BY

(Complete *(if applicable)*)

Name *(Print/Type)*	Robert L. Maier	Registration No. *(Attorney/Agent)*	54,291	Telephone	212-408-2500
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

On Appeal to the Board of
Appeals and Interferences

Applicant :	Paek et al.		
Serial No. :	09/830,899	Group Art Unit:	2171
Filed :	August 13, 2001	Examiner:	Leroux, Etienne Pierre
Title:	DESCRIPTION SCHEMES FOR MPEG-7 IMAGE/VIDEO CONTENTS DESCRIPTION		

BRIEF ON APPEAL

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December 14, 2006
Date of Deposit

Robert L. Maier	54,291
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	December 14, 2006
Signature	Date of Signature

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

On Appeal to the Board of Appeals and Interference

Applicant :	Paek et al.		
Serial No. :	09/830,899	Group Art Unit:	2171
Filed :	August 13, 2001	Examiner:	Leroux, Etienne Pierre
Title:	DESCRIPTION SCHEMES FOR MPEG-7 IMAGE/VIDEO CONTENTS DESCRIPTION		

BRIEF ON APPEAL

This brief on appeal is filed in response to an Office Action issued by the U.S. Patent and Trademark Office (the "PTO") on July 3, 2006. On November 3, 2006, Appellants filed a Notice of Appeal in the above-identified patent application from the rejection of claims 1-43. In accordance with 37 C.F.R. § 41.37, this Appeal Brief is submitted in support of the Appeal of the rejections of record. The fee for this Appeal, as set forth in 37 C.F.R. § 41.20(b)(2), is provided herewith.

For the reasons set forth below, the rejections of pending claims 1-43 should be reversed.

I. REAL PARTY IN INTEREST

The real party in interest is The Trustees of Columbia University in the City of New York, by way of assignment from the named inventors, recorded on August 13, 2001 at Reel 012068, Frame 0221.

II. RELATED APPEALS AND INTERFERENCES

Appellants and the Appellants' legal representatives are unaware of any pending appeals or interferences related to the present application which will directly affect or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

In the July 3, 2006 Office Action, claims 1-43 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 6,079,566 to Eleftheriadis et al. (hereinafter "Eleftheriadis"). Appellants respectfully traverse the rejections of record.

A copy of all of the pending claims is attached hereto in the Claims Appendix at page A-1.

IV. STATUS OF AMENDMENTS

Subsequent to the issuance of the Final Official Action dated July 3, 2006, no further amendments to the claims have been filed by Appellants.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter described in the above-identified application is directed to a method and system for generating a description record from multimedia information. (e.g., Specification, page 4, lines 24-27). Specifically, the claimed subject matter of the present application has useful applications in, e.g., cataloging, indexing and searching multimedia content, as is described in more detail below. (Specification, page 4, line 24 - p. 5, line 12).

Provided herein are some non-limiting references to the specification for illustrative purposes only. Independent claim 1 is directed to a system for generating a description record from multimedia information, comprising:

> at least one multimedia information input interface receiving said multimedia information; *[e.g., specification, p. 26 ("Digital image data 710 is applied to the computer system via link 711."); pp. 27-28, Fig. 8]*
>
> a computer processor, coupled to said at least one multimedia information input interface, receiving said multimedia information therefrom *[e.g., specification, p. 26 ("Digital image data 710 is applied to the computer system via link 711."); pp. 27-28, Fig. 8]*, processing said multimedia information by performing object extraction processing *[e.g., specification, p. 26; Fig. 7, "object extraction 720"; Fig. 3]* to generate multimedia object descriptions *[e.g., specification, p. 26, "object set 721," "object descriptions"; Fig. 5]* from said multimedia information, and processing said generated multimedia object descriptions by object hierarchy processing *[e.g., specification, p. 27; Fig. 7, "object hierarchy extraction and construction module 730;" p. 28; Fig. 8, module 830]* to generate multimedia object hierarchy descriptions *[e.g., pp. 18-19, 23, 25; Figs. 3, 4a, 4b, 5, 6a, 6b]* indicative of an organization of said object descriptions *[e.g., pp. 18-19, 23, 25; Figs. 3, 4a, 4b, 5, 6a, 6b]*, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information *[throughout the specification, it is described in numerous instances that the descriptions are generated for multimedia content, e.g., p. 5, line 12; Fig. 3]*; and
>
> a data storage system, operatively coupled to said processor, for storing said at least one description record *[e.g., Fig. 7, 740; Fig. 8, 840, and related descriptions in specification]*.

(Claim 1).

Importantly, the claimed subject matter includes the recitation of "performing object extraction processing to generate multimedia object descriptions from said multimedia information, and processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions indicative of an organization of said object descriptions, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information." (Claim 1) (*See*, e.g., Specification pp. 11-14, 26-29; Figs. 2, 3, 7, 8; and related citations to the specification and drawings as indicated above). Similar recitations are recited in independent method claim 17, including, e.g.:

receiving said multimedia information *[e.g., specification, p. 26 ("Digital image data 710 is applied to the computer system via link 711."); pp. 27-28, Fig. 8]*;

processing said multimedia information by performing object extraction processing *[e.g., specification, p. 26; Fig. 7, "object extraction 720"; Fig. 3]* to generate multimedia object descriptions from said multimedia information *[e.g., specification, p. 26, "object set 721," "object descriptions"]*;

processing said generated multimedia object descriptions by object hierarchy processing *[e.g., specification, p. 26; Fig. 7, "object extraction 720"; Fig. 3]* to generate multimedia object hierarchy descriptions *[e.g., specification, p. 26, "object set 721," "object descriptions"; Fig. 5]* indicative of an organization of said object descriptions, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated *[throughout the specification, it is described in numerous instances that the descriptions are generated for multimedia content, e.g., p. 5, line 12; Fig. 3]*

storing said at least one description record *[e.g., Fig. 7, 740; Fig. 8, 840, and related descriptions in specification]*.

(Claim 17).

and in independent computer-readable medium claim 33, which includes, *inter alia*:

one or more multimedia object descriptions, generated by performing object extraction processing *[e.g., specification, p. 26; Fig. 7, "object extraction 720"; Fig. 3]*, said object descriptions describing corresponding multimedia objects *[e.g., specification, p. 26, "object set 721," "object descriptions"] [throughout the specification, it is described in numerous instances that the descriptions are generated for multimedia content, e.g., p. 5, line 12; Fig. 3]*;

one or more features characterizing each of said multimedia object descriptions;

one or more multimedia object hierarchy descriptions indicative of an organization of said object descriptions *[e.g., specification, p. 26, "object set 721," "object descriptions"; Fig. 5]*, if any, relating at least a portion of said one or more multimedia objects in accordance with one or more characteristics *[e.g., specification, p. 26, "object set 721," "object descriptions"; Fig. 5]*.

(Claim 33).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-43 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent No. 6,079,566 to Eleftheriadis et al. (hereinafter "Eleftheriadis"). Appellants respectfully request review of all rejections of record.

VII. ARGUMENT

Preliminarily, Applicants note for the record that Appellants do not acquiesce to or otherwise agree with comments in the previous (and now moot) April 13, 2006 Office Action, including, in particular, the comments regarding "Priority" on pages 2-3 and the "Response to Arguments" on pages 8-11. Because that April 13, 2006 Office Action is now withdrawn in favor of the more recently issued July 3, 2006 Office Action, Appellants consider the statements regarding priority and the prior art (including the previously-cited Application Publication No. 2001/0000962 of Rajan) to be moot and not of record. Accordingly, Appellants focus herein only on the present rejections of record in the above-referenced application as set forth in the July 3, 2006 Office Action.

A. The Rejections Under 35 U.S.C. § 102(b) in view of Eleftheriadis Should Be Reversed

In the July 3, 2006 Office Action, claims 1-43 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by U.S. Patent 6,079,566 to Eleftheriadis et al. (hereinafter "Eleftheriadis"). Appellants respectfully traverse the rejections of record.

1. Relevant Case Law

To establish an anticipation rejection, the cited reference must teach every element of the claimed subject matter. 35 U.S.C. § 102(b) states, in pertinent part, that "[a] person shall be entitled to a patent unless the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one

year prior to the date of the application for patent in the United States." A patent claim is thus anticipated under Section 102 if, among other things, "identity of invention" is shown. *Minnesota Mining and Manufacturing Co. v. Johnson & Johnson Orthopedics, Inc.*, 976 F.2d 1559, 1565, 24 U.S.P.Q.2d 1321 (Fed. Cir. 1985). In finding identity of invention, one "must show that each element of the claim in issue is found ... in a single prior art reference." *Id.* The Federal Circuit has held that, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051 (Fed. Cir. 1987). Moreover, "[a] prior art publication cannot be modified by the knowledge of those skilled in the art for purposes of anticipation." *In re Saunders*, 444 F.2d 599, 602-03, 170 U.S.P.Q. 213 (C.C.P.A. 1971).

2. Summary of Arguments

Eleftheriadis does not disclose or suggest a technique for generating a description record from multimedia information including, among other things, "performing object extraction processing to generate multimedia object descriptions," or "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions," as recited in claims 1 and 17, or, as similarly recited in claim 33, "multimedia object descriptions, generated by performing object extraction processing," or "one or more multimedia object hierarchy descriptions indicative of an organization of said object descriptions, if any, relating at least a portion of said one or more multimedia objects in accordance with one or more characteristics." Additionally, Eleftheriadis does not disclose or suggest the claimed "feature extraction processing" of claims 3, 7, 10, 15, 19, 23, 26 and 31. As discussed more fully herein below, because Eleftheriadis fails to disclose or suggest at least these

claimed features, Appellants respectfully submit that Eleftheriadis cannot anticipate the claimed subject matter and that, accordingly, all rejections of record should be reversed.

3. Claims 1-43 Are Not Anticipated Because Eleftheriadis Does Not Disclose "performing object extraction processing to generate multimedia object descriptions"

Independent claim 1 is directed to a system for generating a description record from multimedia information, comprising, *inter alia*:

> a computer processor, coupled to said at least one multimedia information input interface, receiving said multimedia information therefrom, processing said multimedia information by *performing object extraction processing to generate multimedia object descriptions* from said multimedia information, and processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions indicative of an organization of said object descriptions, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information.

(Claim 1).

By way of background, the claimed subject matter relates to the MPEG-7 standard, which comprises techniques for describing and organizing multimedia information (in fact, the inventors of the claimed subject matter contributed to the development of that standard through participation in a standards-setting body) (*See* Specification, p. 2, lines 11-30). As described in the Background of the Invention (starting at p. 1 of the Specification), prior systems relate to means for searching textual information, both on the Internet and locally. However, at the time of the present application, there was no means in the art for searching multimedia content. An aim of MPEG-7 is to process multimedia such as video data to extract information about what is shown in the video and provide descriptions that may later aid in searching or cataloging the video. "Performing object extraction processing to generate multimedia object

descriptions," as recited in the independent claims of the present application (and, by virtue of dependency, as is included in all depending claims), is an important procedure for addressing shortcomings of the prior art. (*See*, e.g., Specification, p. 26; Figs. 7 and 8).

Eleftheriadis is directed to a system and method for processing object-based audiovisual information (which relates to a different standard – the MPEG-4 standard) which is capable of flexibly encoding, storing and accessing a variety of data objects. *See* Eleftheriadis, Abstract. The "Background of the Invention" portion of Eleftheriadis describes the challenges in multimedia coding and storage for graphics, and, in particular, for streaming video. *See* Eleftheriadis, col. 1, lines 17-59. Eleftheriadis addresses those challenges with a system and method as described below:

> The invention overcoming these and other problems in the art relates to a system, method, and associated medium for processing object-based audiovisual information which encodes, stores and retrieves not just overall frames, but individual segments containing AV objects which are then assembled into a scene according to embedded file information. The invention consequently provides very efficient streaming of and random access to component AV objects for even complex scenes. (Eleftheriadis, col. 1, line 62 – col. 2, line 3).

Accordingly, Eleftheriadis addresses completely different issues (i.e., encoding/unencoding and playback of multimedia information (such as streaming video)) from the objects of the claimed subject matter herein (i.e., receiving already-encoded (or already-composed) multimedia information (such as streaming video) and indexing/classifying the content to facilitate subsequent text and/or other searching of that multimedia information). Indeed, this distinction is inherent in the differences between the subject matter of Eleftheriadis (e.g., related to MPEG-4 video composition/encoding/presentation) and the subject matter of the present invention (e.g., related to MPEG-7 video description), and would be immediately apparent to one of ordinary skill in the art.

Eleftheriadis does not disclose or suggest at least the feature of "performing object extraction processing to generate multimedia object descriptions" as recited in claims 1 and 17 or "one or more multimedia object descriptions, generated by performing object extraction" as recited in claim 33. Indeed, the lack of such disclosure in Eleftheriadis is not surprising, since object extraction processing to generate multimedia object descriptions is entirely unnecessary for the purposes of MPEG-4 and Eleftheriadis (which are directed to, e.g., processing/encoding multimedia information, such as streaming video).

The Examiner, on pp. 2-3 of the Office Action, maintains that Eleftheriadis discloses all elements of claim 1. Appellants respectfully disagree.

In particular, the Examiner alleges that col. 7, lines 35-40 of Eleftheriadis discloses the claimed object extraction (Office Action, p. 2, including a citation to read operation module 290, object table 370, and MPEG-4 player 360). However, the entirety of the citation provides:

> In the diagram of FIG. 4, CPU 380 accesses storage device 280 (such as a hard drive) to cause a read operation to be performed on an MPEG-4 file at module 290, and a next segment header is read at module 300. The read operation module 290 accesses an object table 370 for translation purposes, and communicates extracted audiovisual data to MPEG-4 player 360, which may comprise a video buffer, screen, audio channels and related output devices. ID check module 330 checks for an ID in the segment header, transmitting the ID to the Get Object ID module 320, or if not present moving back to next segment module 300. After MPEG-4 player 360 has finished presenting the current audiovisual data, it transmits a request through request module 340 for the next AL PDU (ID), or may request a random AL PDU (ID) through module 350, which in turn communicates that information to the ID check module 310.
> Eleftheriadis, col. 7, lines 34-50.

This portion of Eleftheriadis is clearly directed to a procedure for reading/playing back MPEG-4 encoded video from a storage device, and has no relation whatsoever to the feature of "performing object extraction processing to generate multimedia object descriptions" as recited

in claims 1 and 17 or "one or more multimedia object descriptions, generated by performing object extraction" as recited in claim 33. Again, this distinction would be readily apparent to one of ordinary skill in the art.

For at least this reason, Appellants respectfully submit that Eleftheriadis fails to disclose or suggest all elements of independent claim 1 and its corresponding depending claims. Eleftheriadis therefore cannot properly anticipate the claimed subject matter of claims 1-43 for at least these reasons. Appellants respectfully submit that this alone is sufficient basis to reverse all rejections of record.

4. Claims 1-43 Are Not Anticipated Because Eleftheriadis Does Not Disclose "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions" or "multimedia object hierarchy descriptions"

In addition to the limitations described above, claims 1 and 17 also recite "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object descriptions," and claim 33 similarly recites "multimedia object hierarchy descriptions."

As discussed above, because Eleftheriadis fails to disclose or suggest generating "multimedia object descriptions," Eleftheriadis cannot possibly disclose or suggest "*processing* said generated multimedia object descriptions". For at least this reason, this additional limitation of claims 1 and 17 is not disclosed or suggested by Eleftheriadis.

Additionally, the Examiner relies on col. 3, lines 35-40 of Eleftheriadis as allegedly disclosing "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions." (Office Action, p. 3, including citation to a "tree-structured approach"). The full citation provides:

> In terms of the AL PDU, BIFS and related data structures under MPEG-4, that standard uses an object-based approach. Individual components of a scene are coded as independent objects (e.g. arbitrarily shaped visual objects, or separately coded sounds). The audiovisual objects are transmitted to a receiving terminal along with scene description information, which defines how the objects should be positioned in space and time, in order to construct the scene to be presented to a user. The scene description follows a tree structured approach, similar to the Virtual Reality Modeling Language (VRML) known in the art. The encoding of such scene description information is more fully defined in Part 1 of the official ISO MPEG-4 specification (MPEG-4 Systems), known in the art. BIFS information is transmitted in its own elementary stream, with its own time and clock stamp information to ensure proper coordination of events at the receiving terminal.
> Eleftheriadis, col. 3, lines 29-45.

This lone reference in Eleftheriadis to a "tree-structured approach" is unrelated to the claimed "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions." As explained in detail in the quoted portion of Eleftheriadis above, that reference refers to methods described in MPEG-4 and, e.g., VRML, for providing multimedia scene information using a tree-structure (for, e.g., streaming video playback/scene presentation). However, that tree structure has nothing to do with describing the content of the multimedia information for later search/retrieval. Accordingly, the cited portion of Eleftheriadis bears no relation to the claimed "processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions" as recited in independent claims 1 and 17. For similar reasons, the "one or more multimedia object hierarchy descriptions indicative of an organization of said object descriptions," of independent claim 33 are not disclosed or suggested by Eleftheriadis.

The claimed hierarchy, as further described in an embodiment, e.g., at pp. 17-20 of the present application, relates to an object hierarchy *for description of particular video objects with varying levels of specificity* – for purposes of *content description*, and *not* hierarchy

of a scene for composing or presenting the scene or playing back streaming multimedia information. The claimed object hierarchy processing can produce a "physical hierarchy" and a "logical hierarchy," which relate to the physical location of objects in an image, and a higher level hierarchy based on semantic descriptions of the objects in the image, respectively. (*See* Specification, p. 17; Fig. 4). The object hierarchy descriptions may include semantic information which is useful for searching a library of multimedia segments, such as "names of the picture, the names of persons in the picture, the location where the picture was taken, the event that is represented by the picture, the date of the picture, color features... ." (Specification, p. 20).

Accordingly, because Eleftheriadis fails to disclose or suggest at least these additional claimed features, Eleftheriadis fails to anticipate independent claims 1, 17 and 33. Additionally, because all dependent claims contain the foregoing limitations through dependency from the independent claims, Appellants respectfully submit that the rejections of record should be reversed as to all claims.

5. Claims 3, 7, 10, 15, 19, 23, 26 and 31 Are Further Not Anticipated Because Eleftheriadis Does Not Disclose "feature extraction processing"

Claims 3, 7, 10, 15, 19, 23, 26 and 31 are not anticipated by Eleftheriadis by virtue of their dependency from independent claims 1 and 17, and for the reasons discussed above. Additionally, these claims include the further limitation of "feature extraction processing." (*See* Specification, p. 26). Regardless of the outcome with respect to the independent claims, claims 3, 7, 10, 15, 19, 23, 26 and 31 are independently patentable over Eleftheriadis for the additional reason that Eleftheriadis fails to disclose or suggest "feature extraction processing."

In the Office Action, p. 3, the Examiner asserts that the following portion of Eleftheriadis describes this claimed feature:

> An overview of the invention is shown in FIG. 1 for a first illustrative embodiment relating to a system using stored files, and FIG. 2 for a second illustrative embodiment relating to a system using streaming files. In a streaming implementation, the user views incoming audiovisual portions as they arrive, which may be temporarily stored in electronic memory such as RAM or equivalent memory, but the audiovisual data is not necessarily assembled into a fixed file. In either case, an MPEG-4 file 100 consists of a file header 20 containing global information about the AV objects contained within it, followed by an arbitrary number of segments 30 containing the AV objects within AL PDUs 60 and BIFS data consistent with the MPEG-4 standard known in the art. AV objects 40 can represent textual, graphical, video, audio or other information. Eleftheriadis, col. 3, lines 14-28.

Appellants cannot find any reference in the above-cited paragraph to the claimed "feature extraction." If the Examiner is referring to, e.g., "AV objects 40 can represent textual, graphical, video, audio or other information" as being "features," and that, as a result, this somehow equates to the "feature extraction processing" of the claimed subject matter, Appellants respectfully disagree. Again, as Eleftheriadis relates to presenting multimedia, it has no need to "extract" information about that multimedia it has presented. The cited paragraph of Eleftheriadis in particular relates to the playback of an, e.g., MPEG-4-type multimedia file, and not to extracting information from multimedia. Accordingly, for at least this additional reason, Appellants respectfully submit that the rejections of claims 3, 7, 10, 15, 19, 23, 26 and 31, and the claims which depend from them, should be reversed.

B. Conclusion

For at least the reasons indicated above, Appellants respectfully submit that the claimed subject matter, as discussed above, is not anticipated by the cited prior art. Reversal of the Examiner's rejections of the claims is therefore respectfully requested.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

Claims 1-43 are pending in this application:

1. (Original) A system for generating a description record from multimedia information, comprising:

(a) at least one multimedia information input interface receiving said multimedia information;

(b) a computer processor, coupled to said at least one multimedia information input interface, receiving said multimedia information therefrom, processing said multimedia information by performing object extraction processing to generate multimedia object descriptions from said multimedia information, and processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions indicative of an organization of said object descriptions, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information; and

(c) a data storage system, operatively coupled to said processor, for storing said at least one description record.

2. (Original) The system of claim 1, wherein said multimedia information comprises image information, said multimedia object descriptions comprise image object descriptions, and said multimedia object hierarchy descriptions comprise image object hierarchy descriptions.

3. (Original) The system of claim 2, wherein said object extraction processing comprises:

(a) image segmentation processing to segment each image in said image information into regions within said image; and

(b) feature extraction processing to generate one or more feature descriptions for one or more of said regions;

whereby said generated object descriptions comprise said one or more feature descriptions for one or more of said regions.

4. (Original) The system of claim 3, wherein said one or more feature descriptions are selected from the group consisting of text annotations, color, texture, shape, size, and position.

5. (Original) The system of claim 2, wherein said object hierarchy processing comprises physical object hierarchy organization to generate physical object hierarchy descriptions of said image object descriptions that are based on spatial characteristics of said objects, such that said image object hierarchy descriptions comprise physical descriptions.

6. (Original) The system of claim 5, wherein said object hierarchy processing further comprises logical object hierarchy organization to generate logical object hierarchy descriptions of said image object descriptions that are based on semantic characteristics of said objects, such that said image object hierarchy descriptions comprise both physical and logical descriptions.

7. (Original) The system of claim 6, wherein said object extraction processing comprises:

(a) image segmentation processing to segment each image in said image information into regions within said image; and

(b) feature extraction processing to generate object descriptions for one or more of said region;

and wherein said physical hierarchy organization and said logical hierarchy organization generate hierarchy descriptions of said object descriptions for said one or more of said regions.

8. (Original) The system of claim 7, further comprising an encoder receiving said image object hierarchy descriptions and said image object descriptions, and encoding said image object hierarchy descriptions and said image object descriptions into encoded description information, wherein said data storage system is operative to store said encoded description information as said at least one description record.

9. (Original) The system of claim 1, wherein said multimedia information comprises video information, said multimedia object descriptions comprise video object descriptions including both event descriptions and object descriptions, and said multimedia hierarchy descriptions comprise video object hierarchy descriptions including both event hierarchy descriptions and object hierarchy descriptions.

10. (Original) The system of claim 9, wherein said object extraction processing comprises:

(a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events,

(b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions; and

(c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions.

11. (Original) The system of claim 10, wherein said one or more event feature descriptions are selected from the group consisting of text annotations, shot transition, camera motion, time and key frame, and wherein said one or more object feature descriptions are selected from the group consisting of color, texture, shape, size, position, motion, and time.

12. (Original) The system of claim 9, wherein said object hierarchy processing comprises physical event hierarchy organization to generate physical event hierarchy descriptions of said video object descriptions that are based on temporal characteristics of said video objects, such that said video hierarchy descriptions comprise temporal descriptions.

13. (Original) The system of claim 12, wherein said object hierarchy processing further comprises logical event hierarchy organization to

generate logical event hierarchy descriptions of said video object descriptions that are based on semantic characteristics of said video objects, such that said hierarchy descriptions comprise both temporal and logical descriptions.

14. (Original) The system of claim 13, wherein said object hierarchy processing further comprises physical and logical object hierarchy extraction processing, receiving said temporal and logical descriptions and generating object hierarchy descriptions for video objects embedded within said video information, such that said video hierarchy descriptions comprise temporal and logical event and object descriptions.

15. (Original) The system of claim 14, wherein said object extraction processing comprises:

(a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events,

(b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions; and

(c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions, and wherein said physical event hierarchy organization and said logical event hierarchy organization generate hierarchy descriptions from said event feature descriptions, and wherein said physical object hierarchy organization and said logical object hierarchy organization generate hierarchy descriptions from said object feature descriptions.

16. (Original) The system of claim 15, further comprising an encoder receiving said video object hierarchy descriptions and said video object descriptions, and encoding said video object hierarchy descriptions and said video object descriptions into encoded description information,

wherein said data storage system is operative to store said encoded description information as said at least one description record.

17. (Original) A method for generating a description record from multimedia information, comprising the steps of:

(a) receiving said multimedia information;

(b) processing said multimedia information by performing object extraction processing to generate multimedia object descriptions from said multimedia information;

(c) processing said generated multimedia object descriptions by object hierarchy processing to generate multimedia object hierarchy descriptions indicative of an organization of said object descriptions, wherein at least one description record including said multimedia object descriptions and said multimedia object hierarchy descriptions is generated for content embedded within said multimedia information; and

(d) storing said at least one description record.

18. (Original) The method of claim 17, wherein said multimedia information comprises image information, said multimedia object descriptions comprise image object descriptions, and said multimedia object hierarchy descriptions comprise image object hierarchy descriptions.

19. (Previously amended) The method of claim 18, wherein said object extraction processing step comprises the sub-steps of:

(a) image segmentation processing to segment each image in said image information into regions within said image; and

(b) feature extraction processing to generate one or more feature descriptions for one or more of said regions;

whereby said generated image object descriptions comprise said one or more feature descriptions for one or more of said regions.

20. (Original) The method of claim 19, wherein said one or more feature descriptions are selected from the group consisting of text annotations, color, texture, shape, size, and position.

21. (Original) The method of claim 18, wherein said step of object hierarchy processing includes the sub-step of physical object hierarchy organization to generate physical object hierarchy descriptions of said image object descriptions that are based on spatial characteristics of said objects, such that said image hierarchy descriptions comprise physical descriptions.

22. (Original) The method of claim 21, said step of object hierarchy processing further includes the sub-step of logical object hierarchy organization to generate logical object hierarchy descriptions of said image object descriptions that are based on semantic characteristics of said objects, such that said image object hierarchy descriptions comprise both physical and logical descriptions.

23. (Original) The method of claim 22, \ wherein said step of object extraction processing further includes the sub-steps of:

(a) image segmentation processing to segment each image in said image information into regions within said image; and

(b) feature extraction processing to generate object descriptions for one or more of said region;

and wherein said physical object hierarchy organization sub-step and said logical object hierarchy organization sub-step generate hierarchy descriptions of said object descriptions for said one or more of said regions.

24. (Previously presented) The method of claim 18, further comprising the step of encoding said image object descriptions and said image object hierarchy descriptions into encoded description information prior to said data storage step.

25. (Original) The method of claim 17, wherein said multimedia information comprises video information, said multimedia object

descriptions comprise video object descriptions including both event descriptions and object descriptions, and said multimedia hierarchy descriptions comprise video object hierarchy descriptions including both event hierarchy descriptions and object hierarchy descriptions.

26. (Original) The method of claim 25, wherein said step of object extraction processing comprises the sub-steps of:

(a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events,

(b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions; and

(c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions.

27. (Original) The method of claim 26, wherein said one or more event feature descriptions are selected from the group consisting of text annotations, shot transition, camera motion, time and key frame, and wherein said one or more object feature descriptions are selected from the group consisting of color, texture, shape, size, position, motion, and time.

28. (Original) The method of claim 25, wherein said step of object hierarchy processing includes the sub-step of physical event hierarchy organization to generate physical event hierarchy descriptions of said video object descriptions that are based on temporal characteristics of said video objects, such that said video hierarchy descriptions comprise temporal descriptions.

29. (Original) The method of claim 28, wherein said step of object hierarchy processing further includes the sub-step of logical event hierarchy organization to generate logical event hierarchy descriptions of said video object descriptions that are based on semantic characteristics of

said video objects, such that said hierarchy descriptions comprise both temporal and logical descriptions.

30. (Original) The method of claim 29, wherein said step of object hierarchy processing further comprises the sub-step physical and logical object hierarchy extraction processing, receiving said temporal and logical descriptions and generating object hierarchy descriptions for video objects embedded within said video information, such that said video hierarchy descriptions comprise temporal and logical event and object descriptions..

31. (Original) The method of claim 30, wherein said step of object extraction processing comprises the sub-steps of:

(a) temporal video segmentation processing to temporally segment said video information into one or more video events or groups of video events and generate event descriptions for said video events,

(b) video object extraction processing to segment said one or more video events or groups of video events into one or more regions, and to generate object descriptions for said regions; and

(c) feature extraction processing to generate one or more event feature descriptions for said one or more video events or groups of video events, and one or more object feature descriptions for said one or more regions; wherein said generated video object descriptions include said event feature descriptions and said object descriptions, and wherein said physical event hierarchy organization and said logical event hierarchy organization generate hierarchy descriptions from said event feature descriptions, and wherein said physical object hierarchy organization and said logical object hierarchy organization generate hierarchy descriptions from said object feature descriptions.

32. (Previously presented) The method of claim 31, further comprising the step of encoding said video object descriptions and said video object hierarchy descriptions into encoded description information prior to said data storage step.

33. (Previously presented) A computer readable media containing digital information with at least one multimedia description record

describing multimedia content for corresponding multimedia information, the description record comprising:

(a) one or more multimedia object descriptions, generated by performing object extraction processing, said object descriptions describing corresponding multimedia objects;

(b) one or more features characterizing each of said multimedia object descriptions; and

(c) one or more multimedia object hierarchy descriptions indicative of an organization of said object descriptions, if any, relating at least a portion of said one or more multimedia objects in accordance with one or more characteristics.

34. (Original) The computer readable media of claim 33, wherein said multimedia information comprises image information, said multimedia objects comprise image objects, said multimedia object descriptions comprise image object descriptions, and said multimedia object hierarchy descriptions comprise image object hierarchy descriptions.

35. (Original) The computer readable media of claim 34, wherein said one or more features are selected from the group consisting of text annotations, color, texture, shape, size, and position.

36. (Original) The computer readable media of claim 34, wherein said image object hierarchy descriptions comprise physical object hierarchy descriptions of said image object descriptions based on spatial characteristics of said image objects.

37. (Original) The computer readable media of claim 36, wherein said image object hierarchy descriptions further comprises logical object hierarchy descriptions of said image object descriptions based on semantic characteristics of said image objects.

38. (Original) The computer readable media of claim 33, wherein said multimedia information comprises video information, said multimedia objects comprise events and video objects, said multimedia object descriptions comprise video object descriptions including both event descriptions and object descriptions, said features comprise video event features and video object features, and said multimedia hierarchy descriptions comprise video object hierarchy descriptions including both event hierarchy descriptions and object hierarchy descriptions.

39. (Original) The computer readable media of claim 38, wherein said one or more event feature descriptions are selected from the group consisting of text annotations, shot transition, camera motion, time and key frame, and wherein said one or more object feature descriptions are selected from the group consisting of color, texture, shape, size, position, motion, and time.

40. (Original) The computer readable media of claim 38, wherein said event hierarchy descriptions comprise one or more physical hierarchy descriptions of said events based on temporal characteristics.

41. (Original) The computer readable media of claim 40, wherein said event hierarchy descriptions further comprise one or more logical hierarchy descriptions of said events based on semantic characteristics.

42. (Original) The computer readable media of claim 38, wherein said object hierarchy descriptions comprise one or more physical hierarchy descriptions of said objects based on temporal characteristics.

43. (Original) The computer readable media of claim 39, wherein said object hierarchy descriptions further comprise one or more logical hierarchy descriptions of said objects based on semantic characteristics.

IX. EVIDENCE APPENDIX

None.

X. RELATED PROCEEDINGS APPENDIX

None.